Screech Owl Nesting Box

Name: _____
Date: _____

Description:

We are building Screech Owl boxes to provide nesting quarters to encourage the population of Screech Owls to increase here on campus. Screech Owls are a natural rodent control measure and can in turn save the district lots of time and money if they keep the rodent population down for us. This is a The project will focus on measuring, cutting, squaring, fastening, and gluing. We will be using hand and power tools. We will be reviewing safety and focusing on working efficiently. The goal of this project is to make beautiful and durable owl boxes. We will take our time and do the job well.

Materials:

-1x10 pine cut to 10'
-2" exterior wood screws
-4d x 1 1/2" nails
-CWF or Thompson's Water Seal
-wood glue
-1" hinges (pair)

Tools:

-compound mitre saw
-router
-tape measure
-speed square or combination square
-jigsaw
-bar or wood clamps
-band saw
-hammer
-palm sander and sanding block
-paint brush

Directions:

Before you Start!

Put on your safety glasses
Read all directions and study the plans

1. **Gather it**
   Gather the necessary material. Each team of students will need a piece of 1x10 #2 pine that is cut to 10' in length. Before you begin you must have ready for use a tape measure, speed square or combination square, and pencil.

2. **MEASURE IT**
   Cut your board to the proper dimensions. Mark your board using a tape measure and speed square. Mark and label each piece after you cut it so you

know how to reference it in down the line.Be sure to cut to the outside of your line! **Note!** The blade on the compound mitre saw only cuts up to 8" in length. You will need to cut each piece, then flip it over and cut from the other side to make a cut all the way through the board. Be sure the blade falls right in line with the first cut.

The 1x10 pine needs to be cut down to the following dimensions:

-Top cut to 12"
-Bottom cut to 14"
-Front cut to 15 1/4"
-Sides (two of them) cut to 16"
-Back cut to 21 1/2"

Adjust the mitre saw to the proper angle (zero degrees). Place pine board on mitre saw table making sure the wood is pushed up against the fence. Always cut to the outside of your line so that the **kerf** will not cut into the part of the workpiece you are keeping.

3. **Cut and Drill Bottom**

You need to cut the bottom to shape. See diagram on following pages. The edges to be cut out measure 3/4" by 9 1/4". This will allow for the side panels to attach to the outside of the bottom piece for added strength

-Cut out the excess using a jigsaw or band saw.
-Clean up cut with disc sander.
-Then drill out four 1/2" holes in the bottom piece as shown in the diagram. Mark the centers of the hole 1 1/2" in from the edges of the bottom piece.

4. **Router the Bottom**

Cut three angled groves in the bottom piece using a router mounted its table. Use the **fence** on the router table to keep router cuts straight.

-From the edge of the wide end, mark three lines each 1" apart
-Make router cuts on each of the three lines.

*Be sure to keep fingers at least 3" away from router bit, even if you can't see it.

5. **Cut Out Entry Hole**

Measure the center of the entry hole as shown on diagram.

-Mark out a 3 1/2" hole using a compass.
-Drill 3/8" hole inside circle so you can insert a jigsaw blade.
-Cut out hole using a jig saw with a fine blade.
-Sand out hole using the oscillating spindle sander.

6. **Assemble the Box**

Now that all pieces are cut it is time to assemble the box. You will need a hammer, drill with 1/8" bit, four wood screws, 24" bar clamps, 4d x 1 1/2" finishing nails, and wood glue. Both partners need to assist in making sure all joints are **flush**. Use the bar clamps as needed.

-Assemble the box as shown in the diagram.
-Be sure to only use a very thin line of glue per joint.
-Keep nails in line and equal distance in from edges. Use a compound square to mark accurate placement.

*Glue is much a much stronger bond than nails, therefore extremely important.

5. **Attach the Top**
   The top of the box or lid with pivot from the back of the back of the box. This will allow the lid to open and material to be placed in the box for nesting owls.
   Attach the hinges to the top piece or lid first and then attach to the back piece of the owl box.
   -Measure in 1 1/2" from each side of the lid and mark. This mark will be where the outside edge of the hinge starts. By doing so, each hinge will be place equal distance from the edges.
   -Attach using a Philips head screw driver.
6. **Finish the Box**
   Design is in the details, and this is where we are going to shine. Before applying any sealer to the box, be sure to sink all nails, fill all voids with putty, and sand it down smooth and flush.
   -Sink each mail at least 1/8" using a nail sink.
   -Fill all voids in nails and joints with wood putty.
   -Let dry and sand down until desired look is accomplished.

6. **Sanding and Finishing**
   Seal the box using exterior grade wood sealer and a bristle brush. Be sure to apply an even, thin coat over entire box avoiding runs and dark spots. Apply sealer to the inside of the box as well.
   -Wipe off hinges if any sealer got on them.

Notes:

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Drawing/Photo:

see following pages.

Owl Nesting Box Student Worksheet:

Name: _____
Date: _____

Complete this worksheet prior to starting the project.

1. What size and type of wood is used for this project?

   _____

2. Draw a sketch of the six pieces of the project and label the dimensions.

3. Why are we using wood glue for this project? _____
4. What is the purpose for the sealer? _____
5. This project requires you to drill a large hole. How will we achieve this if we don't have a large enough drill bit?

   _____

6. What tools are required to complete this project?

_____ _____ _____ _____

6. DEFINE THE FOLLOWING:

Kerf--

Flush--

Fence--

Grading Rubric:

Criteria (+/- 1/8")	**Possible**	**Score**
Length and Width	10	
Squareness	15	
Hole location	10	
Worksheet	15	
General Workmanship and Detail (Clean edges, sanded, set nails, clean use of sealer)	50	
TOTAL	**100**	